

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 05 APR 2006

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Applicant's or agent's file reference M/44343-PCT	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. PCT/EP2004/014424	International filing date (day/month/year) 17.12.2004	Priority date (day/month/year) 19.12.2003
International Patent Classification (IPC) or national classification and IPC INV. A01N43/653		
Applicant BASF AKTIENGESELLSCHAFT et al		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 10 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 6 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input checked="" type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand  18.10.2005	Date of completion of this report  05.04.2006	
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer  Muellners, W  Telephone No. +31 70 340-3289	



# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/EP2004/014424

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## Box No. I Basis of the report

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3 and 23.1(b))
    - ☐ publication of the international application (under Rule 12.4)
    - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements**\* of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

### Description, Pages

1-17 as originally filed

### Claims, Numbers

1-33 filed with telefax on 21.11.2005

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
  - ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/EP2004/014424

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**Box No. II Priority**

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1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
  - ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:
- see separate sheet**

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-33
	No: Claims	
Inventive step (IS)	Yes: Claims	1-33
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-33
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**re item II.**

Only the subject-matter of claims 4-6, 26 and 32 is in its entirety entitled to the priority claimed, i.e. 19 December 2003. The priority document relates only to compositions comprising an imidazolinone herbicide and a herbicide selected from carfentrazone and sulfentrazone and corresponding methods for controlling coniferous trees.

Characteristically in the list of claim 3 of the present application these are still specified generically. In the priority application no mentioning of a corresponding method only using carfentrazone or sulfentrazone is made nor of combining carfentrazone or sulfentrazone with other herbicides than imidazolinone herbicides. Thus for the subject-matter of claims 1-3, 7-25, 27-31 and 33 the relevant filing date is instead the 17 December 2004.

**re item V.**

Reference is made to the following documents (D1-D14) cited in the International Search Report:

- D1: YEISER, J.L.: "Wildling Pine Control with R6447, Oust, and Krenite S Combinations" PROCEEDINGS, SOUTHERN WEED SCIENCE SOCIETY, vol. 54, 2001, pages 94-98
- D2: YEISER, J.L.: "Screening Krovar IDF, R6447 (Azafenidin) and Krenite S for Wildling Pine Control" PROCEEDINGS, SOUTHERN WEED SCIENCE SOCIETY, vol. 53, 2000, pages 133-137
- D3: DAYAN F E ET AL: "SELECTIVITY AND MODE OF ACTION OF CARFENTRAZONE-ETHYL, A NOVEL PHENYL TRIAZOLINONE HERBICIDE" PESTICIDE SCIENCE, ELSEVIER APPLIED SCIENCE PUBLISHER. BARKING, GB, vol. 51, no. 1, September 1997 (1997-09), pages 65-73,
- D4: MURAI, S ET AL: "Synthesis and herbicidal activity of sulfonyl ureas; SL-950 and its related compounds" JOURNAL OF PESTICIDE SCIENCE, vol. 20, no. 4, 1995, pages 453-462
- D5: IKEGUCHI MASAHIKO ET AL: "Synthesis and structure-activity relationships of herbicidal thiophene sulfonylurea compounds" JOURNAL OF PESTICIDE SCIENCE, vol. 22, no. 3, 1997, pages 208-217,
- D6: WO 94/09629 A
- D7: DE 199 51 428 A1
- D8: WO 96/03878 A

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/EP2004/014424

- D9: PATENT ABSTRACTS OF JAPAN vol. 1999, no. 12, 29 October 1999 (1999-10-29) & JP 11 199412 A (NISSAN CHEM IND LTD), 27 July 1999
- D10: WO 02/17719 A
- D11: PELLERIN KRISTIE J ET AL: "Herbicide mixtures in water-seeded imidazolinone-resistant rice (*Oryza sativa*).\" WEED TECHNOLOGY, vol. 17, no. 4, October 2003 (2003-10), pages 836-841
- D12: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 2000, LEPIECE, DOMINIQUE ET AL: "Florasulam Primus, a new selective herbicide for the control of broad-leaved weeds in young grass", retrieved from STN Database accession no. 133:100865
- D13: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 1999, ADAMCZEWSKI, KAZIMIERZ ET AL: "The weed control efficacy of carfentrazone ethyl in winter cereals", retrieved from STN Database accession no. 130:1299
- D14: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 2001, SISON, CHESSED M.: "Sulfentrazone for preplant weed control in pineapple", retrieved from STN Database accession no. 134:26456

**Novelty**

Notwithstanding the objections regarding clarity and disclosure (see re item VIII below) the subject-matter of the claims is new in the sense of Article 33(1) and 33(2) PCT in view of the prior art cited above.

Independent claim 1 relates to a method for controlling coniferous plants by applying as a herbicide carfentrazone or sulfentrazone. Claims 2-20 depend on claim 1.

The prior art of D1 and D2 discloses (cf. the passages cited in the international search report) methods for controlling coniferous plants by applying the herbicides azafenidin (=R6447 =Milestone®), sulfometuron (=Oust®) and fosamine (=Krenite® S) or bromacil in combination with diuron (=Krovar® I DF) and some combinations of these. Carfentrazone and Sulfentrazone, which are structurally similar to azafenidin, are not mentioned.

Documents D3-D14 are not relating to the control of coniferous plants.



Independent claims 21 and 22 are directed to compositions per se comprising carfentrazone or sulfentrazone respectively and a second herbicide belonging to an extensive list of about 140 and 160 respectively individual herbicides grouped into 4 herbicide classes specified by their mode of action (A1, A2, A4, A5) and fosamine (A6). Compared to the list given in method claim 3 in total 50 different combinations are omitted. 32 were already exempted in the claims as originally filed by disclaimers. Another 18 are omitted due to cited documents D6-D14 because they disclose (cf. the passages cited in the international search report) herbicidal compositions comprising carfentrazone in combination with a second herbicide, which is MCPB, mecoprop, chlorsulfuron, bensulfuron, pyrazosulfuron or imazosulfuron (D6), flupyrsulfuron (D8), pyrazosulfuron, imazosulfuron, azimsulfuron, cyclosulfamuron, ethoxysulfuron, cinosulfuron or bensulfuron (D9), tritosulfuron, optionally further in combination with e.g. mecoprop (D10), imazethapyr (D11), florasulam (D12), or mecoprop or isoproturon (D13). D7 discloses combinations of carfentrazone or sulfentrazone with thidiazuron, optionally further in combination with diuron, and document D14 discloses combinations of sulfentrazone with bromacil or diuron.

Claims 23-33 which depend on independent composition claims 21 and 23, relate specifically to certain of the combinations listed in claims 21 and 22, e.g. with imazapyr (claim 26 and 32).

Documents D3-D5 discuss (cf. the passages cited in the international search report) specific herbicides namely carfentrazone (D3) and certain sulfonylureas (D4 and D5), in particular with regard to their selectivity, without specifying combinations with other herbicides.

### **Inventive step**

1 Notwithstanding the objections regarding clarity and disclosure (see re item VIII below) the subject-matter of claims 1-33 involves an inventive step in the sense of Article 33(1) and 33(3) PCT.

In the light of the description (see page 1, last paragraph) and the closest prior art of D1 the technical problem underlying the application is to provide a method for reliable and effective wildling conifer control, while not or only slightly damaging newly planted conifer seedlings, and corresponding compositions suitable for use in that method.

According to claim 1 the solution proposed by the present application is characterised by the use of carfentrazone or sulfentrazone as the herbicidal agent. According to dependent claim 2 certain compositions comprising carfentrazone or sulfentrazone in combination with herbicides of certain classes or with fosamine are particularly suitable. Claim 3 lists about 170 specific combination partner and one class (imidazolinone herbicides). Many of the corresponding combinations are claimed in independent claims 21 and 22 per se (see above).

The closest prior art of D1 discloses the use of i.a. azafenidin, which like carfentrazone and sulfentrazone is a protoporphyrinogen oxidase (PPO) inhibiting triazolinone, of sulfometuron and of their combination for controlling herbaceous weeds and wildling pine in pine plantations. The results for wildling pine control were however still inadequate. D2 discloses that azafenidin gives similar control as the conventional treatment with sulfometuron, but confirms that wildling control is not satisfactory.

It is a difficult and almost entirely empirical task to find agents that show selectivity in herbicidal treatment. Whether a compound will be selective in this respect will certainly depend not only on its basic structure but also on structural details.

In general selectivity is not only based on a difference in susceptibility with regard to the biochemical target of the herbicides but will also rely on other factors, like those mentioned in D3 for carfentrazone (see D3, page 71, last paragraph), and the difference in capability of detoxifying the herbicide metabolically, which will strongly depend on further structural features beside the basic structural features responsible for the principal mode of herbicidal action. Other illustrative examples for the complex relationship between selectivity and relatively minor structural differences can be found in D4 and D5 (see the passages cited in the international search report).

Such structural details will be of high importance in particular in cases like the present one, where the plants to be destroyed are not only belonging to the same class (e.g. monocotyledonae), family or genus but even to the very same species, so that the agent has to "discriminate" between varieties of the very same species.

Therefore even slight structural changes of a selective active agent are likely to have an in principle unpredictable but probably negative effect on its selectivity. Even if azafenidin

was, as D1 and D2 show, modestly effective and a possible alternative to the use of sulfometuron, it could not be expected that the other known protoporphyrinogen oxidase (PPO) inhibiting triazolinones carfentrazone and sulfentrazone would show the same selectivity, let alone a better one, i.e. allow an adequate wildling pine control, and thus provide a solution to the underlying problem.

### **Industrial Applicability**

The subject-matter of claims 1-33 is considered to be industrially applicable (Article 33(1) and (4) PCT).

### **re item VIII:**

#### **Clarity and disclosure (Articles 5 and 6 PCT)**

1. As was explained above under re item V. the underlying problem is the provision of a method for controlling pine wildlings in planted pine seedlings and involvement of an inventive step is in principle conceded on the basis that even minor structural changes of the herbicide will have an unpredictable but probably negative effect on selectivity.

The same considerations apply for the combinations with other herbicides as specified in claims 2 and 3. Evidently the same principles have to be applied to the first as well as to the second herbicidal component of a binary combination.

1.1 It has to be stressed that the technical effect which allows to solve the underlying problem is not merely herbicidal activity against wildling conifer seedlings, for which the most likely contribution of adding a further herbicide would be an additive effect, with synergistic and antagonistic effects being the unexpected exemptions, but selectivity with regard to wildling seedlings on one hand and planted seedlings on the other hand. The addition of a further herbicide should thus at least be neutral with regard to the solution of the underlying problem. For this the further herbicide should also show at least some selectivity. However, for the same reasons mentioned above it can be expected that addition of most herbicides will not allow the solution of the problem. For instance both the desired planted seedlings as well as the undesired wildling seedlings contain acetolactate synthase and are thus susceptible to ALS inhibitors. The addition of such an inhibitor is therefore likely to cancel out any selectivity achieved with carfentrazone or sulfentrazone.



Only very few of the ALS inhibitors will actually contribute to the solution of the underlying problem (Article 6 PCT in conjunction with Rules 5.1 (iii), 6.3 and 6.4).

As was pointed out above in the case of the first component the closest prior art of D1 shows that azafenidin, although it is like carfentrazone and sulfentrazone a protoporphyrinogen oxidase (PPO) inhibiting triazolinone, does not give satisfactory wildling control. It appears that the decisive difference, which unexpectedly allows satisfactory control, is due to certain structural features which carfentrazone and sulfentrazone share beyond the common mode of action and which are lacking in azafenidin and other herbicides of that class, like e.g. flumioxazine. Analogously one cannot expect that because the ALS inhibitor imazapyr together with carfentrazone was shown to control wildling seedlings a combination with a structurally unrelated ALS inhibitor like for instance amidosulfuron would do so too; let alone that not even with regard to their mode of action remotely related herbicides like e.g. atratone, bilanaphos, clomeprop or fosamine would do so.

Therefore the lists of claims 2, 3, 21 and 22 have to be seen as mere candidate lists, from which to identify those compounds which actually allow to solve the underlying problem requires for the reasons given above under re item V an undue amount of experimentation or inventive skill. In as far as the subject-matter of the claims may cover other derivatives or combinations which actually solve the underlying problem, than those for which it is shown in the application as originally filed, it thus lacks disclosure (Article 5 PCT).

2. It is further remarked that if such second components would not share a common technical feature, in an analogous way as carfentrazone and sulfentrazone do (in contrast to azafenidine) the corresponding combinations would lack unity of invention (Rule 13.1 and 13.2 PCT).

3. The only method for which the application as originally filed shows that it solves the underlying problem is the one using the combination of imazapyr and carfentrazone, from this it could be predicted that also combinations with other Imidazolinone herbicides will probably solve the underlying problem as well as the corresponding combinations with sulfentrazone.

Therefore the subject-matter of claim 1, 4, 26 and 32 seems to be the only subject-matter meeting not only the requirements of Article 33(1) PCT but also those of Article 5 PCT and of Article 6 PCT in conjunction with Rules 5.1 (iii), 6.3 and 6.4.

4. Regarding the involvement of an inventive step for novel combinations per se covered by claims 21-33, which for the above reasons have to be considered as not providing a solution to the problem as defined above, the following is remarked:  
This subject-matter has to be seen as the solution to the more general problem of providing further mixtures comprising carfentrazone or sulfentrazone. It is general practice to combine known herbicides, because it opens the possibility to improve the efficacy due to an expectable additive effect, to breaking resistances etc. (see e.g. D10, page 1, line 44-page 2, line 2). Such subject-matter could therefore not be considered to involve an inventive step (Article 33(1) and (3) PCT).
5. The reference to esters, thioesters and amides is confusing and unclear since most of the compounds mentioned cannot "have" esters, thioesters and amides since they are not acids, for instance all the agents mentioned in claim 8. The passage of the description was apparently summarily taken over from the priority document, where it appropriately related only to carfentrazone, sulfentrazone and to imidazolinone herbicides (as listed on page 3 ,last line-page 4, first line of the present application) which are indeed all carboxylic acids.
7. Claims 23-33 lack conciseness, there is considerable overlap and the dependencies are inadequate, e.g. both claim 23 and claim 25 name hexazinone, claim 31 covers the subject-matter of several earlier (e.g. claim 29) and later claims (e.g. claim 32).
8. The herbicide "imazethabenz" mentioned in claim 22 is unknown and probably resulting from a typing error.
9. The phrase at the end of claim 31 is probably also resulting from a clerical error.

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We claim:

1. A method for controlling coniferous plants, wherein an effective amount of at least one herbicide B selected from the group consisting of sulfentrazone, carfentrazone and its agriculturally acceptable salts, esters, thioesters and amides is applied to coniferous plants to be controlled and/or to the parts of these plants.
2. The method as claimed in claim 1, wherein at least one further herbicide A which is selected from the group consisting of
  - A1 acetolactate synthase inhibitors (ALS inhibitors);
  - A2 photosynthesis inhibitors;
  - A3 enolpyruvyl shikimate 3-phosphate synthase inhibitors (EPSP inhibitors);
  - A4 glutamine synthetase inhibitors;
  - A5 auxin herbicides; and
  - A6 fosamine
 is applied to coniferous plants to be controlled and/or to the parts of these plants.
3. The method as claimed in claim 2, wherein the further herbicide A is selected from:
  - A1 from the group of the ALS inhibitors: amidosulfuron, azimsulfuron, bensulfuron, chlorimuron, chlorsulfuron, cinosulfuron, cyclosulfamuron, ethametsulfuron, ethoxysulfuron, flazasulfuron, flupyrsulfuron, foramsulfuron, halosulfuron, imazosulfuron, iodosulfuron, mesosulfuron, metsulfuron, nicosulfuron, oxasulfuron, primisulfuron, prosulfuron, pyrazosulfuron, rimsulfuron, sulfometuron, sulfosulfuron, thifensulfuron, triasulfuron, tribenuron, trifloxysulfuron, triflusulfuron, tritosulfuron, imidazolinone herbicides, cloransulam, diclosulam, florasulam, flumetsulam, metosulam, penoxsulam, bispyribac, pyriminobac, propoxycarbazone, flucarbazone, pyribenzoxim, pyriftalid and pyriithiobac;
  - A2 from the group of the photosynthesis inhibitors: atraton, atrazine, ametryne, aziprotryne, cyanazine, cyanatryn, chlorazine, cyprazine, desmetryne, dimethametryne, dipropetryn, eglinazine, ipazine, mesoprazine, methometon, methoprotetryne, procyazine, proglinazine, prometon, prometryne, propazine, sebuthylazine, secbumeton, simazine, simeton, simetryne, terbumeton, terbuthylazine, terbutryne, trietazine, ametriflone, amibuzin, hexazinone, isomethiozin, metamitron, metribuzin, bromacil, isocil, lenacil, terbacil, brompyrazon, chloridazon, dimidazon, desmedipham, phenisopham, phenmedipham, phenmedipham-ethyl, benzthiazuron, buthiuron, ethidimuron, isouron, methabenzthiazuron, monoisouron, tebuthiuron, thiazafluron, anisuron, buturon, chlorbromuron, chloreturon, chlorotoluron, chloroxuron, difenoxuron, dimefuron, diuron,

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fenuron, fluometuron, fluothuron, isoproturon, linuron, methiuron, metobenzuron, metobromuron, metoxuron, monolinuron, monuron, neburon, parafluron, phenobenzuron, siduron, tetrafluron, thidiazuron, cyperquat, diethamquat, difenzoquat, diquat, morfamquat, paraquat, bromobonil, bromoxynil, chloroxynil, iodobonil, ioxynil, amicarbazone, bromofenoxim, flumezin, methazole, bentazon, propanil, pentanochlor, pyridate, and pyridafol;

A3 from the group of the EPSP synthase inhibitors: glyphosate;

A4 from the group of the glutamine synthase inhibitors: glufosinate and bilanaphos;

A5 from the group of the auxin herbicides: clomeprop, 2,4-D, 2,4,5-T, MCPA, MCPA thioethyl, dichlorprop, dichlorprop-P, mecoprop, mecoprop-P, 2,4-DB, MCPB, chloramben, dicamba, 2,3,6-TBA, tricamba, quinclorac, quinmerac, aminopyralid, clopyralid, fluroxypyr, picloram, triclopyr and benazolin;

A6 fosamine;

their agriculturally acceptable salts, amides, esters and thioesters.

4. The method as claimed in claim 3, wherein

a) at least one herbicide A, which is selected from imidazolinone herbicides, and

b) at least one further herbicide B, which is selected from the group consisting of sulfentrazone, carfentrazone, its agriculturally acceptable salts, esters, thioesters and amides.

is applied to the coniferous plants to be controlled or to their parts.

5. The method as claimed in claim 4, wherein herbicide A is selected from imazapyr, its agriculturally acceptable salts, esters, thioesters and amides.

6. The method as claimed in claim 4 or 5, wherein herbicide B is selected from carfentrazone, its agriculturally acceptable salts, esters, thioesters and amides.

7. The method as claimed in claim 1, wherein herbicide A is selected from the group consisting of metsulfuron and sulfometuron, their agriculturally acceptable salts, esters, thioesters and amides.

8. The method as claimed in claim 1, wherein herbicide A is selected from the group consisting of atrazine, cyanazine, hexazinone, diuron, paraquat, bromoxynil, their agriculturally acceptable salts, esters, thioesters and amides.

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9. The method as claimed in claim 1, wherein herbicide A is glyphosate, an agriculturally acceptable salt, ester, thioester or amide thereof.
- 5 10. The method as claimed in claim 1, wherein herbicide A is glufosinate, an agriculturally acceptable salt, ester, thioester or amide thereof.
11. The method as claimed in claim 1, wherein herbicide A is selected from the group consisting of 2,4-D, dicamba, aminopyralid, clopyralid, fluroxypyr, picloram and  
10 triclopyr, their agriculturally acceptable salts, esters, thioesters and amides.
12. The method as claimed in claim 1, wherein herbicide A is fosamine.
13. The method as claimed in claim 1, wherein herbicide A is selected from the group  
15 consisting of metsulfuron, sulfometuron, imazapyr, hexazinone, paraquat, glyphosate, glufosinate, 2,4-D, dicamba, aminopyralid, clopyralid, picloram, triclopyr and fosamine, their agriculturally acceptable salts, esters, thioesters and amides.
14. The method as claimed in claim 1, wherein the effective amount of herbicide B  
20 and optionally herbicide A is applied during site preparation for a plantation of coniferous trees.
15. The method as claimed in claim 2, wherein the herbicide A and the herbicide B are applied in a weight ratio A:B ranging from 1:5 to 200:1.
- 25 16. The method as claimed in claim 2, wherein the herbicide A is applied in amounts from 100 to 1400 g/ha.
17. The method as claimed in claim 1, wherein the herbicide B is applied in amounts  
30 from 10 to 500 g/ha.
18. The method as claimed in claim 1, wherein the effective amount of herbicide B and optionally herbicide A is applied after emergence of the coniferous plants to be controlled.
- 35 19. The method as claimed in claim 1, wherein the coniferous plants to be controlled belong to the pinaceae family.
20. The method as claimed in claim 19, wherein the coniferous plants to be controlled are selected from the pine species *P. banksiana*, *P. clausa*, *P. echinata*,  
40 *P. ellioti*, *P. contorta*, *P. palustris*, *P. glabra*, *P. lambertina*, *P. ponderosa*,

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## 21

*P. pungens*, *P. rigida*, *P. resinosa*, *P. serotina*, *P. strobilus*, *P. taeda* and *P. virginiana*.

21. A herbicidal composition, which comprises
- 5 at least one herbicide A, which is selected from the group consisting of
- A1 from the group of the ALS inhibitors: amidosulfuron, ethametsulfuron, flazasulfuron, foramsulfuron, iodosulfuron, mesosulfuron, oxasulfuron, rimsulfuron, sulfometuron, sulfosulfuron, triasulfuron, trifloxysulfuron, triflusulfuron, imazamox, imazapyr, imazapic, imazaquin, imazethapyr, cloransulam,
- 10 diclosulam, metosulam, penoxsulam, bispyribac, pyriminobac, propoxycarbazone, flucarbazone, pyribenzoxim and pyriftalid;
- A2 from the group of the photosynthesis inhibitors: atraton, ametryne, aziprotryne, cyanazine, cyanatryn, chlorazine, cyprazine, desmetryne, dimethametryne, dipropetryn, eglazine, ipazine, mesoprazine, methometon, methoprotetryne, procyazine, proglazine, prometon, prometryne, propazine,
- 15 sebuthylazine, secbumeton, simazine, simeton, simetryne, terbumeton, terbuthylazine, terbutryne, trietazine, ametrifone, amibuzin, hexazinone, isomethiozin, metamitron, metribuzin, bromacil, isocil, lenacil, terbacil, brompyrazon, chloridazon, dimidazon, desmedipham, phenisopham, phenmedipham, phenmedipham-ethyl, benzthiazuron, buthiuron, ethidimuron, isouron, methabenzthiazuron, monoisouron, tebuthiuron, thiazafluron, anisuron, buturon, chlorbromuron, chlortoluron, chloroxuron, difenoxuron, dimefuron, fenuron, fluometuron, fluothuron, linuron, methiuron, metobenzuron, metobromuron, metoxuron, monolinuron, monuron,
- 20 neburon, parafluron, phenobenzuron, siduron, tetrafluron, cyperquat, diethamquat, diquat, morfamquat, bromobonil, chloroxynil, iodobonil, ioxynil, amicarbazone, bromofenoxim, flumezin, methazole, bentazon, propanil, pentanochlor and pyridafol;
- A4 from the group of the glutamine synthase inhibitors: bilanaphos;
- 30 A5 from the group of the auxin herbicides: clomeprop, 2,4,5-T, dichlorprop, dichlorprop-P, 2,4-DB, chloramben, 2,3,6-TBA, tricamba, quinclorac, quinmerac, aminopyralid, fluroxypyr, picloram, triclopyr and benazolin;
- A6 fosamine;
- and their agriculturally acceptable salts, amides, esters and thioesters.
- 35 and
- carfentrazone, an agriculturally acceptable salt, amide or ester thereof.

- 40 22. A herbicidal composition, which comprises
- at least one herbicide A, which is selected from the group consisting of

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- 5 A1 from the group of the ALS inhibitors: amidosulfuron, azimsulfuron, bensulfuron, chlorsulfuron, clinosulfuron, cyclosulfamuron, ethametsulfuron, ethoxysulfuron, flazasulfuron, foramsulfuron, halosulfuron, iodosulfuron, mesosulfuron, metsulfuron, nicosulfuron, oxasulfuron, primisulfuron, prosulfuron, pyrazosulfuron, sulfometuron, sulfosulfuron, thifensulfuron, triasulfuron, trifloxysulfuron, triflusulfuron, tritosulfuron, imazamox, imazapyr, imazapic, imazaquin, imazethabenz, diclosulam, florasulam, metosulam, penoxsulam, bispyribac, pyriminobac, propoxycarbazone, flucarbazone, pyribenzoxim, pyriftalid and pyriothiobac;
- 10 A2 from the group of the photosynthesis inhibitors: atraton, atrazine, ametryne, aziprotryne, cyanazine, cyanatryn, chlorazine, cyprazine, desmetryne, dimethametryne, dipropetryn, eglinazine, ipazine, mesoprazine, methometon, methoprotetryne, procyazine, proglinazine, prometon, prometryne, propazine, sebuthylazine, secbumeton, simazine, simeton, simetryne, terbumeton, terbuthylazine, terbutryne, trietazine, ametridione, amibuzin, hexazinone, isomethiozin, metamitron, isocil, lenacil, terbacil, brompyrazon, chloridazon, dimidazon, desmedipham, phenisopham, phenmedipham, phenmedipham-ethyl, benzthiazuron, buthiuron, ethidimuron, isouron, methabenzthiazuron, monoisouron, tebuthiuron, thiazafluron, anisuron, buturon, chlorbromuron, chloreturon, chlorotoluron, chloroxuron, difenoxuron, dimefuron, fenuron, fluometuron, fluothiuron, isoproturon, linuron, methiuron, metobenzuron, metobromuron, metoxuron, monolinuron, monuron, neburon, parafluron, phenobenzuron, siduron, tetrafluron, cyperquat, diethamquat, difenzoquat, diquat, morfamquat, paraquat, bromobonil, bromoxynil, chloroxynil, iodobonil, ioxynil, amicarbazone, bromofenoxim, flumezin, methazole, bentazon, propanil, pentanochlor, pyridate, and pyridafol;
- 20 A4 from the group of the glutamine synthase inhibitors: glufosinate and bilanaphos;
- 25 A5 from the group of the auxin herbicides: clomeprop, 2,4,5-T, MCPA, MCPA thioethyl, dichlorprop, dichlorprop-P, mecoprop-P, 2,4-DB, MCPB, chloramben, dicamba, 2,3,6-TBA, tricamba, quinclorac, quinmerac, aminopyralid, clopyralid, fluroxypyr, picloram, triclopyr and benazolin;
- 30 A6 fosamine;
- 35 and their agriculturally acceptable salts, amides, esters and thioesters,
- and
- 40 sulfentrazone.

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23. The composition as claimed in claim 21, wherein herbicide A is selected from the group consisting of cyanazine and hexazinone.
- 5 24. The composition as claimed in claim 21, wherein herbicide A is selected from the group consisting of aminopyralid, picloram and triclopyr, their agriculturally acceptable salts, esters, thioesters and amides.
- 10 25. The composition as claimed in claim 21, wherein herbicide A is selected from the group consisting of sulfometuron, imazapyr, hexazinon, aminopyralid, picloram, triclopyr and fosamine, their agriculturally acceptable salts, esters, thioesters and amides.
- 15 26. The composition as claimed in claim 21, wherein herbicide A is selected from imazapyr, its agriculturally acceptable salts, esters, thioesters and amides.
- 20 27. The composition as claimed in claim 22, wherein herbicide A is selected from the group consisting of metsulfuron and sulfometuron, their agriculturally acceptable salts, esters, thioesters and amides.
- 25 28. The composition as claimed in claim 22, wherein herbicide A is selected from the group consisting of atrazine, cyanazine, hexazinone bromoxynil and paraquat, their agriculturally acceptable salts, esters, thioesters and amides.
- 30 29. The composition as claimed in claim 22, wherein herbicide A is glufosinate, an agriculturally acceptable salt, ester, thioester or amide thereof.
- 35 30. The composition as claimed in claim 22, wherein herbicide A is selected from the group consisting of dicamba, aminopyralid, clopyralid, fluroxypyr, picloram and triclopyr, their agriculturally acceptable salts, esters, thioesters and amides.
31. The composition as claimed in claim 22, wherein herbicide A is selected from the group consisting of metsulfuron, sulfometuron, imazapyr, glufosinate, dicamba, aminopyralid, clopyralid, picloram, triclopyr and fosamine, their agriculturally acceptable salts, esters, thioesters and amides, hexazinone, paraquat and its agriculturally acceptable salts.
32. The composition as claimed in claim 22, wherein herbicide A is selected from imazapyr, its agriculturally acceptable salts, esters, thioesters and amides.
- 40 33. The composition as claimed in claim 21 or 22, wherein herbicide A is fosamine, an agriculturally acceptable salt, ester, thioester or amide thereof.

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